Physical access to the environment: A barrier for disabled people

More than 500 million people in the world are denied full participation in their families, communities and societies, because they are disabled. The lack of physical access to facilities, transportation and information isolates and segregates disabled people, and prevents them from enjoying equal opportunities in housing, employment, recreation and health care.

In the early 1980s, a United Nations report estimated that approximately ten per cent of the world population were disabled. Many more people are impacted by disabilities, including the parents, children and spouses of disabled people. In addition, most people experience some form of physical impairment during their lifetimes, such as back pain, arthritis or work- or sports-related injury. Old age is often accompanied by loss of hearing, vision and mobility. Most people will encounter physical barriers to mobility, directly or indirectly, in the course of their lifetimes.

The causes of disability range from birth defects to traffic accidents, cardiovascular diseases to poor sanitation and hygiene, malnutrition, congenital and contagious diseases, the use of alcohol and drugs and the effects of terrorism and war. Disability strikes people in every country, in all age groups and at all income levels.

The obstacles to physical access faced by disabled persons depend on the nature of their disability, as well as on the environment in which they live. For example, a person who has lost a limb and is living in a refugee camp in a developing country will have a very different experience than will another person who has lost a limb and is living in a resource rich urban area in a developed nation. As another example, a person with tuberculosis or asthma may experience limitations in stamina which make it difficult to climb hills, lift heavy objects or walk significant distances. If that person is able to work in a sedentary job, he or she will have a very different experience from that of the person who must do hard physical labour to earn a living. A blind person in a developed country will often have the opportunity to learn orientation and mobility skills which enable her to travel independently. A blind person in a developing country may never have that opportunity and instead must rely on family members to help her negotiate her environment.

In developing countries, as many as 80 per cent of all disabled people live in isolated rural areas. They are often extremely poor, and do not have access to health education, medical facilities, rehabilitation or support services. They are often unable to obtain the medical care, the physical therapy or the brace, crutch or artificial limb which could provide them with mobility.

When a child of a poor family in rural India is stricken by poliomyelitis in his legs, for example, he may never have the chance to participate in his community. There may be no health clinic anywhere in the area, and his family may not have the money to travel to a large town to get him medical care, or find the physical therapy he needs. Because he can't walk, and has no mobility aid, he can't go to school, learn job skill, or earn a living. His disability presents a barrier to going to school, getting a job or having a social life. In developing countries, increasing the availability of medical care and rehabilitation is a priority for disabled people.

For disabled people in developed countries, medical care, rehabilitation and mobility aids are usually available, but the physical environment presents numerous barriers to full participation in daily life. For a disabled person in a developed country, the choices of jobs, homes, schools, restaurants, hotels, theatres, doctors' offices, pharmacies, retail stores, museums, libraries, parks and day-care cen-

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ters are all limited by the question of physical access.

As an example, it is useful to compare the first day on a new job for a non-disabled office worker with that of an office worker in a wheelchair, who has lost the use of her legs. The non-disabled person must plan around new bus or train schedules, or decide which route to take to avoid possible traffic jams. He must meet his new boss and co-workers and learn the requirements of the new job. In addition to these concerns, a person in a wheelchair has to consider a long list of questions related to physical acccess. She may also encounter condescension, ignorance about disability, hostility or scorn in her new co-workers.

To begin with, the disabled person must find a way to get to work. If she drives, she must determine whether there is appropriate parking available. Is the parking space wide enough so that she can move between cars in her wheelchair? If she takes the bus, she has to know whether she can get to the bus stop. Is the route to the bus stop along a wide, smooth sidewalk, or is the pavement bumpy or the route hilly? Are there curb cuts at the crosswalks, or are there six-inch curbs? Are there any stairs along the way? She must find out whether the bus is wheelchair-accessible, and whether the curb at the bus stop is at the right level so that she can board the bus. Will the bus driver be helpful? How will other passengers react to the delay in their commute while she boards the bus and finds room to sit? They may bombard her with hostile stares and vocal complaints.

When this office worker arrives at work, she will need to know whether she can enter the building independently through a wide, automatic doorway, or whether she will encounter a narrow doorway or revolving doors. Will she have to ask someone to hold the door open for her? Is there a long staircase, or is there an elevator? If there is an elevator, is the elevator button at an accessible level or will she have to depend on someone else to push it for her? She may find that the passenger elevator is too narrow to accomodate her wheelchair, and that she has to use a freight elevator.

When she reaches the floor where her new office is, will she find a wide hallway that is free of obstacles? Perhaps there is a thick carpet on the floor which will hinder her movement. Is her office large enough so that she can move around freely, and is her desk at the right height? Can she reach the bookshelves and file drawers from her wheelchair? When she wants to go get a drink of water, will she be able to reach the water fountain? Is there a wheelchair accessible toilet on her floor? If so, does it contain an accessible sink, soap and towel dispenser?

A disabled person seeking housing or employment, planning a trip or going to the store faces numerous physical obstacles. Many of these would be removed if buildings, sidewalks and transportation systems were constructed with disabled people in mind.

Blind and visually impaired people face a complex set of barriers to accessing the environment. To perceive the environment, blind and visually impaired people must take full advantage of their non-visual senses. They must learn to use hearing, smell, touch and balance to navigate. For example, a blind person might use the heat of sunlight on his skin to indicate direction, the smell of a canal or gas station or a sudden change in sound to provide a landmark.

Orientation and mobility are two sets of skills a blind person needs to negotiate the environment. Orientation is the understanding of where one is in relation to objects like furniture and in relation to buildings and streets. Mobility is the ability to use environmental information to negotiate the environment. To find their way around a large building complex, or a city, blind people must have a mental map of area so that they can keep track of their route.

Many blind people use a long cane or a guide dog to provide them with this information about their environment. Each of these methods have its drawbacks. A person using a cane has precise information on the surface of the pavement or grass on which he is travelling, and can detect solid objects like walls, curbs, stairs or trees, but has difficulty detecting tree limbs or hanging wires. A person using a guide dog must be willing to care for her dog, and be able to walk at the dog's usually rapid pace. She does not have the precise information about the ground surface provided by a cane.

In most environments, a blind person en-

counters many obstacles to orientation and mobility. For example, a large open space, such as a building lobby or paved plaza or large field, offers few tactile, auditory or olfactory clues, and a blind person can easily lose his bearings. It is very difficult to create a mental map of a complex building because it contains so many curves, angles and level changes. Paths and sidewalks have irregularities, such as potholes, lamp-posts, garbage cans etc. Open ditches, unexpected stairs, curbs and ramps present safety hazards for blind people. Sighted people rely on visual information to make an apparently simple decision about when to cross a street, but for blind people, street crossing presents a major safety challenge. Without an auditory signal, a blind person has no definitive information to indicate whether there are cars coming or a traffic light has changed. Many cities in Japan and Europe now provide audible traffic signals to indicate to blind and visually impaired people when it is safe to cross the street.

Another major physical barrier for blind and visually impaired people is lack of access to information. Most public information is presented in printed form. Street signs, exit and entry signs, bus and train schedules, product labels, menus and all kinds of directions are presented visually. Blind people are forced to rely on sighted people to translate printed information into audible form.

For deaf and hearing-impaired people, lack of access to information also presents a major barrier. Hearing people rely on audible information from others around them, and from radio, television and telephone communications, to make daily decisions. For deaf people, most of this information is inaccesible. For people with mental disabilities, complex auditory and visual information can present a barrier to physical access.

During the 1980s, several countries introduced national legislation to make the physical environment more accessible to disabled people. New laws and building codes in Australia, Chile, Germany, Japan, the Philippines, Poland, Portugal, Spain and other countries are designed to insure that there are no physical barriers preventing access to public buildings and facilities. In the United States, the Americans with Disabilities Act of 1990 requires accessibility in all new facilities, and the removal of physical barriers in existing facilities.

Despite these changes, inaccessible buildings are still being constructed, even in highly developed countries. Many new buildings provide a few accessible features, to meet the minimum legal requirements. For example, a new building may provide one wheelchair-accessible entrance and one accessible restroom. A business may install a "wide" doorway which is not wide enough for a large wheelchair to pass through. For many disabled people this addition of accessible features to an otherwise inaccessible building is not enough.

The concept of universal access provides a unique alternative to the concept of accessibility. Universal access is the idea of designing buildings and products so that they can be used by everyone who has some mobility. The minimums and maximums for accessibility now required by law in many countries are often insufficient for many disabled people, and can be misinterpreted by builders. The concept of universal design recognizes that non-disabled people can easily fit through a wider doorway, drink from a lower drinking fountain, or walk up a ramp instead of a staircase. While "special" accomodations for disabled people often serve to further isolate them from the rest of society, universal access works to integrate disabled people into society. If new buildings and transportation systems were designed for universal access, many of the physical barriers faced by disabled people would be removed. However, architects, builders and planners must be willing to implement this concept.

The removal of physical barriers requires not only changes in design and construction of buildings and transportation systems, but changes in the attitudes of non-disabled people towards disabled people. The segregation and isolation that physical barriers impose on disabled people reflect the attitudes of the societies in which they live.

The United Nations is working to break down these barriers through the World Programme of Action Concerning Disabled Persons, a set of principles, goals and guidelines for all nations to achieve "a society for all". The Programme is based on the principle that all disabled people have the same rights

as other citizens, including rights to education and training, employment, recreation, cultural activities, religion, sports and full access to information and the physical environment.

The World Programme of Action provides objectives and guidelines to implement programmes for disabled people at the international, national and regional levels. Key objectives of the Programme include preventing disability and rehabilitating and reintegrating disabled people into community life. The Programme recognizes that the direct participation of disabled people is essential to effective legislation, planning and implementation of new programmes and services. Organizations of disabled people play a central role in the Programme.

Achieving a fully accessible society is one of the Programme's principal goals. This goal is defined as the removal of physical and other barriers that restrict and limit people's opportunity to exercise their rights as citizens and to participate fully in society. Through the World Programme of Action, the UN is working with Member States to increase access to buildings, improve transportation services to disabled people, increase access to recreational facilities and sports and ensure that Governments comply with their legal obligations to ensure equal opportunity for disabled people.

In addition, the United Nations is in the process of drafting Standard Rules on the Equalization of Opportunities for Disabled Persons, which call on Member States to develop action programmes and legislation to make the physical environment accessible to persons with disabilities.

Published by the United Nations Department of Public Information
DPI/1259—August 1992— 6M